EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT

FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

WSOU INVESTMENTS, LLC d/b/a., BRAZOS LICENSING AND DEVELOPMENT, *Plaintiff*,	§	Civil Case No. 6:20-cv-572-ADA
v.	§	
GOOGLE LLC, *Defendant*.	§	

DECLARATION OF WESLEY D. SIMPSON
REGARDING U.S. PATENT NO. 8,041,806

I, Wesley D. Simpson, hereby declare as follows:

I. BACKGROUND AND QUALIFICATIONS

1. I am over eighteen years of age, and I would be competent to testify as to the matters set forth herein if I am called upon to do so.

2. I have been retained by the law firm of Jones Day on behalf of Defendant Google LLC ("Google") to provide my opinion in connection with the above-captioned litigation. I have been asked to provide an opinion regarding the meaning of the term "Internet Protocol Television (IPTV) service" in U.S. Patent No. 8,041,806 ("the '806 patent").

3. The opinions that I set forth in my declaration are based upon my knowledge and experience, the claims and specification of the '806 patent, the file history of the '806 patent, and other relevant materials.

4. I am being compensated at my customary rate of $250 per hour plus expenses for my work related to this declaration. My compensation is in no way dependent or contingent on my opinions and testimony, or on the outcome of this matter.

II. PROFESSIONAL QUALIFICATIONS

5. Below is a summary of my educational background, career history, publications, and other relevant qualifications. My full curriculum vitae is attached hereto as Exhibit A.

A. EDUCATION AND WORK EXPERIENCE

6. I earned my Bachelor of Science in Electrical and Computer Engineering from Clarkson University in Potsdam NY in 1980, and my Master of Business Administration with a concentration in Marketing from the Simon Business School of the University of Rochester, NY in 1984.

7. My professional career has spanned more than 42 years. During these years I have gained extensive experience in telecommunications, data networking and video technology. Examples of my experience are summarized in the following paragraphs.

8. From 1994 to 1999 I worked as Product Line Manager for the DV6000 product line with ADC Telecommunications in Meriden CT, and was subsequently promoted to Director of Product Management and Business Unit Manager. While at ADC, I became involved with Bellcore's Video Services Industry Forum (VSIF), which served to help the Regional Bell Operating Companies (RBOCs) and other Local Exchange Carriers (LECs) develop and provide a suite of tariffed video services with compatible interfaces and performance specifications for use by professional broadcasters. After this group disbanded in 1996, I helped found the Video Services Forum (VSF, www.vsf.tv) in 1997 which has become a leading source of specifications and subsequent standards for IP-based video transport. I have been an active member of the VSF since it was founded (having never missed a meeting series) and have chaired and co-chaired working groups that have developed specifications for compressed and uncompressed IP video transmission systems.

9. In 1997, I joined the Society of Motion Picture and Television Engineers (SMPTE, www.smpte.org) and subsequently became active in the standards development process. As part of the 32NF Network/Facilities Infrastructure committee, I have been and continue to be actively involved in the development of IP video transport standards, including ST 2022 for compressed and uncompressed media transport over IP networks and ST 2110 for high bit rate, uncompressed media transport over IP networks.

10. In 1999, I was recruited by a Wallingford, CT based startup, VBrick, to be the company's Chief Operating Officer. While there, I helped run a company that was selling video to the desktop solutions based on ATM (Asynchronous Transfer Mode) networking while pivoting into using IP networks instead. One of my achievements was writing the product specification for this new generation product, which was a complete update of the product and technology for VBrick.

11. In October, 2000, I founded Telecom Product Consulting, where I have been an independent technology and marketing consultant for the past two decades. My primary focus has been on video networking technology, including compressed and uncompressed video carried primarily over IP networks. In many cases, my role was to act as the interface between engineering teams and marketing groups, as well as helping companies bring their products to market. Some of my significant clients have included:

    a. Media Links, a Japanese provider of IP video backbone products which needed help in establishing a foothold in the U.S. market. Media Links has become the preferred supplier of uncompressed video transport equipment for AT&T.

    b. IneoQuest, a leading provider of network monitoring tools for video production and distribution networks, including CATV, IPTV and Internet Video systems; the company was acquired by Telestream in 2017.

    c. A.R.G Electrodesign, a provider of IP-based and telco-based video networking and switching equipment.

12. I am currently self-employed as Founder and President of Telecom Product Consulting in Orange, CT and Founder and President of LearnIPvideo.com.

B. PUBLICATIONS, COURSEWORK, RESEARCH

13. I have also published, taught courses, and given presentations and speeches extensively on telecommunications, data networking and video technology. Examples of this experience are listed below.

14. I am the author of the following technical books and articles on IPTV and Internet Video technology:

a. **IPTV and Internet Video: Expanding the Reach of Television Broadcasting** – 1st Edition © 2007; 2nd Edition ©2009, published by Focal Press, a unit of Elsevier Inc. in the NAB Executive Technology Briefings series.

b. **Video Over IP -** A Practical Guide to Technology and Applications © 2006, published by Focal Press, a unit of Elsevier Inc.

c. **Video Over IP –** IPTV, Internet Video, H.264, P2P, Web TV and Streaming: A Complete Guide to Understanding the Technology 2nd Edition ©2008, published by Focal Press, a unit of Elsevier Inc.

d. **NAB Engineering Handbook** – 10th Edition Chapter 6.13: Audio and Video over IP Networks and Internet Broadcasting ©2007 by Focal Press and the National Association of Broadcasters.

e. **TV Technology Magazine –** Contributing Editor, Webinar Host and Columnist since 2006.

15. I have developed and taught the following courses on IP networking technology and video technology.

a. **IEEE:** The IEEE BTS (Broadcast Technology Society) retained me to create their "Bridging the Gap" training class, which focused on teaching

people with broadcasting backgrounds about IP networking technology and people with networking backgrounds about video technology. This course was delivered to a number of broadcast organizations and engineers over several years.

b. **SMPTE:** The SMPTE (Society of Motion Picture and Television Engineers) education department licensed a course that I developed called "Essentials of IP Media Transport for Broadcasters" and hired me to rewrite and teach a course called "Understanding SMPTE ST 2110," focusing on the latest-generation IP technology for television production.

c. **Founder of LearnIPvideo.com**: In 2020, I founded LearnIPvideo.com to provide online classes in video technology, and have also delivered live training (via Zoom) to a number of broadcasters under contract in the past two years.

16. I have chaired and contributed to research committees focusing on TV technologies.

a. NATAS: In 2015, I was invited to join the Technical Emmy Committee of the National Academy of Television Arts and Sciences (NATAS). I have chaired a number of technical subcommittees that were tasked with researching technologies and recommending award recipients for Technical Emmys.

C. AWARDS

17. I am the proud recipient of several industry honors, including:

a. Video Services Forum, Inc. (VSF) Honorary Member in 2010

b. Society of Motion Picture and Television Engineers (SMPTE) Fellow in 2018.

c. National Academy of Television Arts and Sciences (NATAS) Technical Emmy Innovator Award in 2022 for my contributions to the team that developed VSF TR-03 and TR-04, and my subsequent work to transform those specifications into SMPTE ST 2110.

18. Additional details of my education and work experience, awards and honors, and publications that may be relevant to the opinions I have formed are set forth in my curriculum vitae (Exhibit A).

III. MATERIALS REVIEWED

19. In preparing this declaration, I reviewed the '806 patent (572 Case, Dkt. 1-1), including the claims and the specification, the prosecution history of the '806 patent, and technical references contemporaneous with the filing date of the '806 patent as set forth below:

a. *Mike Quigley (Alcatel President)*, "The real meaning of IPTV" (BusinessWeek, May 2005) (GOOG-WSOU572-CC-000506) (Ex. 2)

b. "*What is IPTV*," AT&T (2009) (GOOG-WSOU572-CC-000449) (Ex. 3)

c. SBC Internet Update (GOOG-WSOU572-CC-000325) (Ex. 4)

d. AT&T U-Verse Timeline (GOOG-WSOU572-CC-000372) (Ex. 5)

e. Alliance for Telecommunications Industry Solutions (ATIS) IPTV Exploratory Group Report and Recommendation to the TOPS Council (July 2005) (GOOG-WSOU572-CC-000327) (Ex. 6)

f. International Engineering Consortium Internet Protocol Television (IPTV) Tutorial (2005) (GOOG-WSOU572-00075803) (Ex. 7)

g. "IPTV vs. Internet Television: Key Differences," MasterNewMedia (June 4, 2005) (GOOG-WSOU572-CC-000438) (Ex. 8)

h. Internet Core Protocols – The Definitive Guide (Feb. 2000) (GOOG-WSOU572-CC-000515) (Ex. 9)

i. Microsoft Press Computer Dictionary (1997) (GOOG-WSOU572-CC-000233) (Ex. 10)

j. Newton's Telecom Dictionary (2001) (GOOG-WSOU572-CC-000253) (Ex. 11)

k. Dictionary of the Internet (2001) (GOOG-WSOU572-CC-000374) (Ex. 12)

l. Internet Protocol, DARPA Internet Program Protocol Specification (Sept. 1981) (GOOG-WSOU572-CC-000385) (Ex. 13)

m. Newton's Telecom Dictionary (2004) (GOOG-WSOU572-CC-000476) (Ex. 14)

n. 2005 Alliance for Telecommunications Industry Solutions (ATIS) Annual Report (GOOG-WSOU572-CC-000274) (Ex. 15)

o. *"Network infrastructure for IPTV,"* WIPRO (Jan. 2006) (GOOG-WSOU572-CC-000481) (Ex. 16)

p. "*IPTV Delivery Architecture*," International Telecommunication Union (Oct. 2006) (GOOG-WSOU572-00075680) (Ex. 17)

q. *Simpson, W.*, IPTV and Internet Video (2007) (Excerpts) (GOOG-WSOU572-CC-000547) (Ex. 18)

r. *Simpson W.*, Video Over IP (2nd ed. 2008) (Excerpts) (GOOG-WSOU572-00076100) (Ex. 19)

s. "*Analysis and characterization of IPTV user behavior*," Lund University (2009) (GOOG-WSOU572-00075828) (Ex. 20)

t. *Chiang M.*, Networked Life (2012) (Excerpts) (GOOG-WSOU572-00075981) (Ex. 21)

u. *Chiang, M.*, "Which Way to Watch Video on the Internet? - IPTV and VOI" (2012) (GOOG-WSOU572-00075664; GOOG-WSOU572-00076196) (Exs. 22-23)

v. All other materials cited herein

IV. BACKGROUND OF THE TECHNOLOGY

20. I have reviewed the disclosures of the '806 patent, including the prosecution history, specification, drawings, and claims.

21. The '806 patent relates to electronic content delivery to subscribers in communication networks based on subscriber behaviors.

22. The communication systems of the '806 patent include "subscriber systems" connected to an "access network" (also referred to in the '806 patent as an "access communication network"), which in turn is connected to a "core communication network." *E.g.*, '806 patent at Figs. 1-2.

23. The network topology and functions of the communication systems described in the '806 patent were well known in the art as of the filing date of the '806 patent. *E.g.*, '806 patent at 4:62-67, 5:24-32, Figs. 1-2. This includes the networks implemented by Internet Service Providers (ISPs) to provide services such as public Internet access and Internet Protocol Television (IPTV) services in that time frame.

24. For example, the communication system of Figure 1 "is typical of an Internet service system, wherein an Internet Service Provider (ISP) implements switches, routers, and/or

other network equipment as the access communication network 16 to provide its subscribers with access to the Internet as the core communication network 18." '806 patent at 5:11-16. Similarly, the system 20 of Figure 2, which describes in more detail the access network 16 of Figure 1, "includes a subscriber system 22, which is operatively coupled to an access network 24 through an access communication link 26. The access network 24 is operatively coupled to an electronic content source 58, which is one example of a system that provides a function or service, in this case electronic content, to the subscriber 22." '806 patent at 5:36-41.

25. In another example, with respect to Figure 1, "[e]lectronic content, searching, shopping, and/or other functions may be supported by servers or other systems within the access communication network 16, where an ISP provides an Internet Protocol TV (IPTV) service as a source of electronic content for instance, by servers or other systems within or connected to the core communication network 18, or in both the access and core communication networks." '806 patent at 5:17-23. Similarly, with respect to Figure 2, "[t]he electronic content source 58, another participant in the system 20, represents any electronic content publisher such as a traditional portal (webpage), a video content provider, etc. An electronic content source could also or instead be implemented within the access network 24. An ISP might host its own IPTV service, for example." '806 patent at 7:39-44.

V. LEGAL PRINCIPLES APPLIED

26. I am not a lawyer, but I have been informed of the following legal principles regarding claim construction, which I have applied in forming my opinions.

A. Claim Construction

27. I understand that claim construction begins with the words of the claim itself, which generally receive their ordinary and customary meaning as understood by a person of ordinary skill in the art at the time of a patent's filing date in the context of the specification and prosecution history. I understand that to determine the ordinary and customary meaning of a claim term it is necessary to look at the claims, the specification, and the prosecution history.

28. I also understand that contemporaneous materials such as dictionaries, treatises, and other articles can also be considered to determine the meaning of claim term at the filing date of a patent.

B. Level of Ordinary Skill in the Art

29. I have been informed that the meaning of claim term is determined by how a person of ordinary skill in the art would understand that term at the time of the filing of the patent.

30. Based on my review of the '806 patent and my personal experience in educating, supervising, and working with persons in the telecommunications field (including IPTV and Internet Video technology), it is my opinion that a person of ordinary skill in the art would have a Bachelor's degree in Electrical Engineering, Computer Engineering, Computer Science, or equivalent thereof, and at least two years of experience in media streaming technology, and/or client-server systems, or a Master's or PhD in Electrical Engineering, Computer Engineering, Computer Science, or equivalent thereof.

31. I have applied this understanding of a person of ordinary skill in the art when forming my opinions.

VI. THE TERM "INTERNET PROTOCOL TELEVISION (IPTV) SERVICE" IN THE '806 PATENT

32. It is my understanding that the parties dispute the proper construction of the term "Internet Protocol Television (IPTV) service" in the '806 patent.

33. It is my understanding that the parties have proposed the following constructions for "Internet Protocol Television (IPTV) service":

Google's Proposed Construction	**WSOU's Proposed Construction**
"An internet service provider (ISP) service that delivers television content to subscribers over a private, managed Internet Protocol (IP) network connection."	plain and ordinary meaning

34. I have reviewed the parties' proposed constructions in view of the patent claims, specification, file history, other materials contemporaneous with the '806 patent's filing date of September 11, 2006, and my own experience as of the '806 patent's filing date.

35. In my opinion, Google's construction reflects how a person of ordinary skill in the art would have understood the term "Internet Protocol Television (IPTV) Service" as of the '806 patent's filing date.

36. In my experience, "IPTV" is often mistaken or mischaracterized as a service that provides videos over the public Internet. This is because the "IP" in "IPTV" means "Internet Protocol," which includes the word "Internet." As a result, IPTV is often confused with video transmitted over the public Internet (also known as Internet Video). *E.g.*, The Real Meaning of IPTV (Ex. 2 at GOOG-WSOU572-CC-000506 - 507.)

However, the reference to "Internet Protocol" in IPTV does not mean that IPTV services use the Internet. *E.g.* Video Over IP (Ex. 19 at GOOG-WSOU572-00076106 - 107).

37. The "Internet" is a public network that interconnects a global community of data providers and users. *E.g.*, Internet Core Protocols – The Definitive Guide (Feb. 2000) (Ex. 9 at GOOG-WSOU572-CC-000521 – 522); Microsoft Press Computer Dictionary (1997) (Ex. 10 at GOOG-WSOU572-CC-000246); Newton's Telecom Dictionary (2001) (Ex. 11 at GOOG-WSOU572-CC-000268); Dictionary of the Internet (2001) (Ex. 12 at GOOG-WSOU572-CC-000378); Video Over IP (Ex. 19 at GOOG-WSOU572-00076128).

38. In contrast, "Internet Protocol" is a set of standards for formatting and transporting data across networks that use data packets for communication. Microsoft Press Computer Dictionary (1997) (Ex. 10 at GOOG-WSOU572-CC-000249); Dictionary of the Internet (2001) (Ex. 12 at GOOG-WSOU572-CC-000379); AT&T Article: What is IPTV (Ex. 3 at GOOG-WSOU572-CC-000449); Video Over IP (Ex. 19 at GOOG-WSOU572-00076127); Internet Protocol, DARPA Internet Program Protocol Specification (Sep. 1981) (Ex. 13 at GOOG-WSOU572-CC-000391). The networks that use these standards include both the Internet (which is a public network) and private, managed networks. *E.g.*, IPTV and Internet Video (Ex. 18 at GOOG-WSOU572-CC-000554.)

39. Based on my research and experience in the telecommunications industry, in recent years "IPTV" is becoming more frequently interpreted as covering television content transmitted over both private and public IP networks. However, as of the '806 patent's filing date, an IPTV service was understood in terms of not only the content it provided, but also in terms of the closed type of network used to deliver that content. Specifically,

IPTV services were delivered exclusively over private, managed network connections, not over the public Internet. This was due to performance limitations in subscriber viewing equipment, networking technologies (including the inability of the public Internet to support multicast protocols, which IPTV services rely on to deliver broadcast-quality television channels), and the lack of sufficient cost-effective network and server capacity to deliver high bandwidth video across public Internet core backbone and subscriber public Internet connections.

40. Various dictionary definitions, technical references, academic publications, standards bodies, telecommunications companies, and other sources contemporaneous with the filing date of the '806 patent, including some of my own publications in the field, frequently defined and discussed IPTV and features. To reduce confusion between IPTV and other video technologies (e.g. Internet Video), it was common for these sources to define IPTV in terms of its private, managed network in publications contemporaneous with the '806 patent's filing date.

41. For example, Newton's Telecom Dictionary (2004) states "IPTV is a Microsoft project. The technology is designed to let *telecommunications and cable companies offer* new *subscriber services that use their two-way broadband networks*." Newton's Telecom Dictionary (2004) (Ex. 14 at GOOG-WSOU572-CC-000478). This definition is consistent with the development and management of private, two-way broadband networks by telecommunications companies such as SBC (which later became known as AT&T) to deliver IPTV services to their subscribers in the 2006 time frame.

42. I am familiar with AT&T's IPTV service, U-verse, which was developed and launched in the June 2004 – June 2006 timeframe, using Microsoft's IPTV platform. AT&T (then

SBC) developed and deployed a fiber network (Project Lightspeed) to deliver U-verse to its subscribers. *E.g.*, SBC Internet Update (Ex. 4 at GOOG-WSOU572-CC-000326); AT&T U-Verse Timeline (Ex. 5 at GOOG-WSOU572-CC-000372-73); IPTV and Internet Video (Ex. 18 at GOOG-WSOU572-CC-000554). Alcatel, the original assignee of the '806 patent, supplied network equipment for Project Lightspeed. AT&T U-Verse Timeline (Ex. 5 at GOOG-WSOU572-CC-000372). AT&T, which was an ISP as of the filing date of the '806 patent, also explained "What is IPTV" to its U-verse customers as follows:

> **Internet Protocol**
>
> Think of Internet Protocol as a "language" that devices use to communicate over a computer network. *IP is not the same thing as the Internet*. Rather, it's the same language used by the Internet. IP technology allows information to be sent and received over any broadband or network connection.
>
> * * *
>
> **Why IPTV is Different Than Cable Technology**
>
> IPTV is a different, improved technology than "traditional" cable or satellite TV, and it allows for more flexibility within the network. *IPTV enables two-way interactivity, versus a traditional, one-way cable or satellite broadcast network*. The two-way IPTV network means viewers have more options to interact, personalize and control their viewing experience.
>
> * * *
>
> **How IPTV is Different Than Internet Video**
>
> *Watching U-verse TV is different than streaming videos over the public Internet. With U-verse TV, programming is carried over our managed network*, which allows us to control video quality and the reliability of your service. Best-effort Internet video can be subject to delays due to lower bandwidth, high traffic or poor connection quality.

AT&T, "*What is IPTV*" (2009) (Ex. 3 at GOOG-WSOU572-CC-000449).

43. Also, in 2005 the president of telecommunications company Alcatel, the original assignee of the '806 patent, described IPTV as follows in an article titled "The Real Meaning of IPTV":

> Let's start with what IPTV is not. *Specifically, it is not TV that is broadcast over the Internet*. While the "IP" in its name stands for Internet protocol, that doesn't mean people will log onto their favorite Web page to access television programming. *The IP refers to a method of sending information over a secure, tightly managed network that results in a superior entertainment experience*.
>
> *Mike Quigley (Alcatel President)*, "The Real Meaning of IPTV" (BusinessWeek, May 2005) (Ex. 2 at GOOG-WSOU572-CC-000506-07).

44. Further, prior to the '806 patent's filing date, engineering institutions distinguished IPTV from Internet Video, and defined IPTV in terms of its private, managed means of delivery. For example an "Internet Protocol Television (IPTV) Tutorial" by the International Engineering Consortium (of which original '806 patent assignee Alcatel was a principal sponsor), stated:

> IPTV is a system used to deliver digital television services to the consumers who are registered subscribers for this system. This delivery of digital television is made possible by using Internet Protocol over a broadband connection, *usually in a managed network rather than the public Internet* to preserve quality of service guarantees.
>
> * * *
>
> *It is important to remember that IPTV is not like any ordinary television system broadcast through the Internet*, but rather is unique in itself. *Its contour is represented by a closed, proprietary TV system* which is similar to the cable services present today. But, in contrast, the delivery of IPTV is made via IP-based secure channels, which result in a sharp increase in content distribution control.
>
> * * *

> Moreover, one must also remember that *IPTV is noticeably different from "Internet Video"*. Internet Video provides services to watch videos, such as movie previews and web-cams. This service is a so-called "best effort" by providers of the Internet, which has no back-to-back service management along with quality of service considerations.
>
> *International Engineering Consortium Internet Protocol Television (IPTV) Tutorial* (© 2005) (Ex. 7 at GOOG-WSOU572-00075803 – 811).

45. Other technical sources also drew similar differences between IPTV and Internet Video, and defined IPTV in a manner consistent with the meaning of a service "over a private, managed Internet Protocol (IP) network connection":

> *IPTV is represented by a profile of closed, proprietary TV systems* such as those present today on cable services but delivered via IP-based secure channels representing a sharp increase in control of content distribution.
>
> * * *
>
> *IPTV is not TV that is broadcast over the Internet*.
>
> * * *
>
> *IP-TV is a carrier-led and controlled platform. There is a physical carrier that has physical pipes and infrastructure that it operates and controls. The consumer interacts directly with that operator/carrier.*
>
> As such this is an end-to-end system or semi-closed network (*infrastructure is all within the carrier environment, and cannot be normally accessed to the Internet as a whole*. Further to this, *the deployment infrastructure and devices to access it are all managed and operated by the IP-TV carrier*).
>
> "*IPTV vs. Internet Television: Key Differences*" (MasterNewMedia, June 4, 2005) (Ex. 8 at GOOG-WSOU572-CC-000438 - 440).

46. Telecommunications industry standards organizations similarly described IPTV. For example, the Alliance for Telecommunications Industry Solutions (ATIS) described IPTV as follows in 2005:

> IPTV is defined as the secure and reliable delivery to subscribers of entertainment video and related services. These services may include, for example, Live TV, Video On Demand (VOD) and Interactive TV (iTV). *These services are delivered across an access agnostic, packet switched network that employs the IP protocol to transport the audio, video and control signals. In contrast to video over the public Internet, with IPTV deployments, network security and performance are tightly managed* to ensure a superior entertainment experience, resulting in a compelling business environment for content providers, advertisers and customers alike.
>
> * * *
>
> *Today, the term IPTV does not encompass [a]ny video services originating from the public Internet.*
>
> "*Alliance for Telecommunications Industry Solutions (ATIS) IPTV Exploratory Group Report and Recommendation to the TOPS Council*" (July 2005) (Ex. 6 at GOOG-WSOU572-CC-000330, 333-335); and 2005 ATIS Annual Report (similar definition, and listing Alcatel, the original assignee of the '806 patent, as an ATIS member) (Ex. 15 at GOOG-WSOU572-CC-000274, - 276, -278, - 279, 284, 318, 320).

47. The ATIS definition of IPTV was adopted by multinational information technology corporations such as WIPRO Technologies. *E.g. "Network infrastructure for IPTV"*, WIPRO (Jan. 2006) (Ex. 16 at GOOG-WSOU572-CC-000483, 487, 495-500).

48. In another telecommunications industry example, the Chief IPTV Architect of the International Telecommunication Union, in a workshop titled "IPTV Delivery Architecture", explained that: "*IPTV is defined as Multimedia services* (Television / video / audio / text / graphics / data*) Delivered over managed IP based networks* providing appropriate QoS / QoE, security, interactivity and reliability." "*IPTV Delivery Architecture*", International Telecommunication Union (Oct. 2006) (Ex. 17 at GOOG-WSOU572-00075681).

49. In addition, I examined IPTV services extensively, published technical references, and taught courses describing IPTV services contemporaneously with the '806 Patent's filing

date. These materials describe the private, managed aspects of IPTV as key features of an IPTV service. *E.g.*, *Simpson W.*, IPTV and Internet Video (2007) at 32 ("IPTV networks primarily deliver multiple streams of continuous content *over private networks* to viewers who watch the content on normal television sets.") (Ex. 18 at GOOG-WSOU572-CC-000554, 561, 562, 563- 64 (discussing IPTV network management), 566 (Table 2.1 identifying "Private IP network" as one of the "Key Differences Between IPTV and Internet Video"), 569 (discussing IPTV's "private networks"), 572 (describing IPTV's private, managed characteristics as a "walled garden"), 578-79 (describing Internet Protocol (IP)), ; *Simpson W.*, Video Over IP at 2 (2nd Ed. 2008) ("IPTV is a method for delivering traditional, linear television programming to consumers over a private IP network.") (Ex. 19 at GOOG-WSOU572-00076132 - 136).

50. Also, shortly after the filing date of the '806 patent, and prior to its issuance, various technical publications, including university articles, described IPTV similarly to the sources discussed above. For example:

> Internet TV is not the same thing as IPTV, although the key differences between these two services are not clearly defined. *Internet Television is quite different from IPTV in terms of the model for the consumer, the publisher and for the infrastructure itself*. In Internet TV, the video publishing model is the same as the web publishing model, that is anyone can create an endpoint and publish it on a global basis. The transmission of video through open IP networks uses the public Internet, and the access of video can be achieved from any computer all over the world. As a result, Internet TV is sometimes referred to as "over the top" (OTT). By contrast, *IPTV refers to the delivery of video services over closed IP networks which are supported by telecom companies. Besides, IP in IPTV stands for Internet Protocol, which means that the user does not have to log on to a web page to access TV programs. It is a method to transmit data over a managed network.*
>
> *Analysis and characterization of IPTV user behavior*, Lund University (2009) (Ex. 20 at GOOG-WSOU572-00075829-830).

51. Even shortly after the issuance of the '806 Patent, various publications continued to describe IPTV in terms of its private, managed network. *E.g.*, *Chiang M.*, Networked Life at 383 (2012) ("IPTV . . . is *delivered over a private and managed network*, with a set-top box on the customers premises. This private network uses IP as a control protocol, but many parts of it are deployed and operated by a single ISP, e.g. a telephone or cable company offering the Internet access. This makes it easier to control the quality of service.") (Ex. 21 at GOOG-WSOU572-00075987-88; *Chiang, M.*, "Which Way to Watch Video on the Internet? - IPTV and VOI" (course video explaining that IPTV is delivered *"[o]ver a private and managed network*, often with a set-top box on a consumer premise.") (Exs. 22-23 at GOOG-WSOU572-00075664; GOOG-WSOU572-00076196).

52. In my opinion, the '806 patent's disclosures related the claimed "Internet Protocol Television (IPTV) service" are consistent with how the foregoing information sources described IPTV contemporaneously with the '806 patent's filing date.

53. For example, with reference to Figure 1, the '806 patent states that an ISP "*implements switches, routers, and/or other network equipment as the access communication network 16* to provide its subscribers with access to the Internet as the core communication network 18." '806 patent at 5:11-16. Given that the ISP implements the access communication network 16, and the ISP's subscribers use the access communication network 16 to connect to the core communication network 18 (i.e. the public Internet), a person of ordinary skill in the art would understand that the ISP's access communication network 16 is a private (i.e. proprietary) network that is managed by the ISP, and which is not the public Internet.

54. With reference to Figure 1, the '806 patent also states that "within the access communication network 16, [] an ISP provides an Internet Protocol TV (IPTV) service as a source of electronic content," '806 patent at 5:17-23, and a person of ordinary skill in the art would understand this to mean that the ISP provided the IPTV service over its own network implementation (i.e. access communication network 16), rather than over the public Internet (core communication network 18).

55. Figure 2 of the '806 patent similarly discloses an "access network" that a person of ordinary skill in the art would understand to be proprietary, managed by an ISP, and used by the ISP to provide an IPTV service. The implementation of Figure 1's "access communication network 16", which I examine above, is discussed in further detail with reference to Figure 2's "access network 24." '806 patent at 5:30-35. Figure 2 includes "a subscriber system 22, which is operatively coupled to an access network 24 through an access communication link 26. *The access network 24* is *operatively coupled to an electronic content source 58*, which is one example of a system *that provides a function or service, in this case electronic content, to the subscriber 22*." '806 patent at 5:36-41. The '806 patent explains that "*[t]he subscriber* 22 is in some embodiments an Internet service subscriber, or *more generally a subscriber to a service offered by the access network 24*." '806 patent at 7:27-29. The patent also discloses that the electronic content source 58 could "be *implemented within the access network 24. An ISP might host its own IPTV service*, for example." '806 patent at 7:43-44.

56. The '806 patent also includes additional disclosures indicating that the access network, where the IPTV service is provided, is a private, managed network. For example, the access network in Figure 2 includes a subscriber management element (SME) that "is

implemented in a Remote Access Server (RAS), a Broadband RAS (BRAS), or a set of routers and/or switches with subscriber management functions that acts as a distributed BRAS", "such as those found in advanced 'triple play' access network architectures." '806 patent at 6:29-32, 8:4-13. A RAS is a type of server that connects remote users to an organization's internal *local area network (LAN)* or to an Internet Service Provider's (ISP) network. *E.g.*, Microsoft Press Computer Dictionary (1997) (Ex. 10 at GOOG-WSOU572-CC-000250); Newton's Telecom Dictionary (2001) (Ex. 11 at GOOG-WSOU572-CC-000272); Dictionary of the Internet (2001) (Ex. 12 at GOOG-WSOU572-CC-000380); A BRAS is a private, specialized server that ISPs use to facilitate convergence of internet traffic into a single network. The types of RAS disclosed in the access network of the '806 patent are used for remote connections to a private, managed network. A person of ordinary skill in the art would understand a network architecture including the above-mentioned SME and RAS servers to be a network that offers IPTV services over a private, managed, IP network connection. *E.g.* Video Over IP (Ex. 19 at GOOG-WSOU572-00076136, GOOG-WSOU572-00076146.)

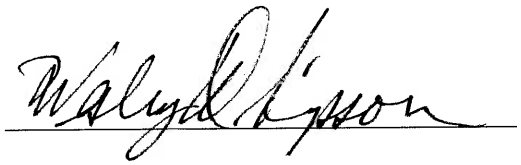
57. Consistent with these disclosures, the term "Internet Protocol Television (IPTV) service" would have been understood by a person of ordinary skill in the art to mean "an internet service provider (ISP) service that delivers television content to subscribers over a private, managed Internet Protocol (IP) network connection."

VII. CONCLUSION

58. For the foregoing reasons, in my opinion the term "Internet Protocol Television (IPTV) Service" would have been understood by a person of ordinary skill in the art at time of the '806 patent's filing date to mean "an internet service provider (ISP) service that

delivers television content to subscribers over a private, managed Internet Protocol (IP) network connection."

59. I declare under penalty of perjury that the foregoing is true and correct.



Wesley D. Simpson

Date: November 16, 2022

EXHIBIT A

Wesley D. Simpson
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Orange, CT 06477
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EXPERIENCE:

LearnIPvideo.com
Founder 7/20 – Present

Provider of technical training services for media industry professionals
* Developed suite of self-paced online courses covering multiple technology topics
* Delivered customized on-line training classes for large media organizations

TV Technology Magazine, Falls Church, VA
Webinar Host and technical contributor 12/17 – Present
Columnist for regular feature titled "Video Networking" 9/06 – 7/18

Telecom Product Consulting, Orange CT
Founder / President 10/00 – Present

Marketing, Product Research, Training and Business Development Consulting Services
* Well-known technology consultant, speaker, writer and educator
* Over fifty conference presentations and sixty published articles
* Particular focus on strategic product planning and marketing, technology education, business development, and sales channel development in North America and Europe
* Developed white papers, presentations, brochures, and market analyses for clients
* Managed market introductions for video compression and networking products
* Successfully completed long term, retainer-based agreements with multiple clients
* Wrote and delivered courses sponsored by SMPTE, IEEE BTS and Brandman University

VBrick Systems, Incorporated, Wallingford CT
Chief Operating Officer 11/99 – 10/00

Strategic and Tactical Management of a Video Networking Products Company
* Achieved year to year revenue growth in excess of 600%
* Maintained gross margins in excess of 55%
* Increased Customer base by over 300%
* Successfully negotiated OEM contracts with Lucent and VTEL
* Increased sales staff from 2 to 14 and engineering staff from 11 to 25 in extremely tight labor market over a five month period
* Participated venture financing efforts; resulted in $8.8 million closing in April 2000
* Recruited high profile marketing team; ramped up trade show and promotional efforts
* Wrote system-level specification for next-generation MPEG2 encoder product

ADC Telecommunications, Broadband Communications Division, Meriden CT
Business Unit Manager / Director of Product Management 4/94 – 11/99

Full P+L Responsibility for $90 Million Product Line.
* Directed growth of product line from $11 Million annual sales to $90 Million in four years
* Established solid track record and strong reputation for support of field sales efforts, including key customer presentations covering both technical and business issues
* Prepared Annual Operating Plans and Five Year Strategic Plans for business unit
* Increased product line Gross Margins from low 40's to high 50's in three years while maintaining >90% share in core market
* Introduced first telephony transport products into formerly video-only systems
* Developed strong relationships with all RBOC's and many CATV MSO's
* Coordinated activities of 60 person engineering department
* Participated in acquisition and integration of MPEG product subsidiary
* Awarded membership in ADC's Presidents Advisory Council, 1996 and 1999

Laser Precision Corporation, Lightwave Communications Division, Milford CT
General Manager / Director of Marketing 3/91 – 3/94

Fully responsible for turning around troubled subsidiary
* Developed and implemented shift in strategic focus from fiber optic modems to high performance computer accessories, thereby doubling total served market for company.
* Introduced two new products into UNIX workstation market
* Established presence in brokerage desktop supporting Sun and Bloomberg equipment
* Received product approvals from Sun Microsystems, Silicon Graphics (SGI) and Hewlett-Packard (HP)
* Introduced MRP and inventory control systems to improve timeliness of shipments
* Achieved 35% revenue growth per year for three years running

Laser Precision Corporation, Fiber Optic Test Equipment Division, Utica NY
Director of Marketing 5/89 – 3/91

Responsible for all marketing and product management functions for a $20 million line of test equipment sold to telecommunication companies worldwide
* Successfully sold new products to six of seven US RBOC's, all major US IXC's, numerous Independent Telco's, and several overseas PTT's
* Oversaw development of a whole new class of test equipment, Feature Finders, to complement existing OTDR product line
* Developed and implemented coherent advertising strategy; maintained all spending within tight budget limits, wrote master corporate five-year plan

Wilcom Products, Inc., Laconia NH
Product Manager, Digital Test Equipment 8/86 – 4/89

Responsible for revamping line of digital test equipment for sale to operating telephone companies and long distance companies
* Wrote specification and launched new-generation test set to replace existing product line.
* Developed and implemented sales plan introducing first non-intrusive DS3 test set available in US market
* Worked with advertising agency and wrote copy for all product literature and trade pubs

TELINQ Systems, Inc., Richardson TX
Founder / System Engineer 3/85 – 3/86

Performed market research, created product concept, and developed business plan for an innovative telecomm product which resulted in an initial funding by venture capital firms totaling $3 million.
* Created concept of asynchronous add/drop multiplexor for DS3 level signals
* Defined hardware and software architecture, performed throughput analyses
* Wrote initial product specifications, and defined software/hardware interface
* Identified and contacted target customers, developed initial product sales literature

DSC Communications, Digital Switch Division, Plano TX
Senior Software Engineer 8/84 – 3/85

Wrote system specifications and lead software team for DSC’s first digital cross-connect system
* Participated in development of pure time switch for over 300 DS1 signals
* Developed intimate familiarity with both DS1 and DS3 network interfaces

Harris Corporation, RF Communications Division, Rochester NY
Senior Software Engineer 7/82 – 7/84

Directed group of engineers responsible for high capacity mobile telephone systems.
* Duties included cost estimation, scheduling, and supervising activities of 4-6 engineers
* Introduced first software change control system at this facility
* Created new feature definitions and performed extensive customer interface

Software Engineer 6/80 – 6/82

Responsible for design, development, and testing of software for mobile telephone system

EDUCATION:

Master of Business Administration June 1984
University of Rochester, Rochester NY
Concentration: MBA in Marketing

Bachelor of Science, Electrical and Computer Engineering May 1980
Clarkson University, Potsdam NY
Concentration: BSEE in Software Engineering and Computer Architecture

PUBLICATIONS:

Books

IPTV and Internet Video: Expanding the Reach of Television Broadcasting – 2nd Edition ©2009 217 pp
Published by Focal Press, a unit of Elsevier Inc. in the *NAB Executive Technology Briefings* series

Video Over IP – IPTV, Internet Video, H.264, P2P, Web TV and Streaming: A Complete Guide to Understanding the Technology 2nd Edition ©2008 478 pp Focal Press, a unit of Elsevier Inc.

NAB Engineering Handbook – 10th Edition *Chapter 6.13: Audio and Video over IP Networks and Internet Broadcasting* © 2007 by Focal Press and the National Association of Broadcasters

PROFESSIONAL ASSOCIATIONS:

NATAS (National Academy of Television Arts and Sciences) 2014-Preent
Technology and Engineering Achievement Awards Committee (Technical Emmy awards)
Committee Member 2014-Present
Subcommittee Chair 2017-2020, 2022

Video Services Forum (www.videoservicesforum.org) 1997-Present
Founding Member
Member, Board of Directors 1997-2001
Chairman, Studio Video over IP (SVIP) Ad Hoc Group
Co-Chairman, Reliable Internet Stream Transport (RIST) Ad Hoc Group

SMPTE (Society of Motion Picture and Television Engineers) 2004-Present
Fellow, 2018
Member, TC32-NF Network/Facilities Architecture Group
Member, SMPTE Journal Board of Editors

IEEE BTS (Institute of Electrical and Electronics Engineers, Broadcast Technology Society) 2009-2019

SCTE (Society of Cable Telecommunication Engineers) 1995-1999
Member, Digital Video Engineering Subcommittee 1998-1999

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Getting Started with Cloud Services for Automation and Playout
By Wes Simpson published November 19, 2020

2020 Report from Advanced Media Workflow Association (AMWA), Video Services Forum (VSF) and Joint Taskforce on Networked Media (JT-NM)
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By Wes Simpson published 2019

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By Wes Simpson published January 15, 2018

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By Wes Simpson published November 15, 2017

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By Wes Simpson published October 30, 2017

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By Wes Simpson published June 27, 2017

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By Wes Simpson published May 05, 2015

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